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United States Patent [19][11] **Patent Number:** **5,284,106****Meng**[45] **Date of Patent:** **Feb. 8, 1994**[54] **SUPERCONDUCTING ELECTROMAGNETIC
TORPEDO LAUNCHER**[75] **Inventor:** **James C. S. Meng, Portsmouth, R.I.**[73] **Assignee:** **The United States of America as
represented by the Secretary of the
Navy, Washington, D.C.**[21] **Appl. No.:** **16,349**[22] **Filed:** **Feb. 11, 1993**[51] **Int. Cl.:** **B63H 19/00**[52] **U.S. Cl.:** **114/238**[58] **Field of Search** **440/6, 3, 5, 38, 39,
440/40, 41, 42, 43, 44, 47; 60/202, 203.1, 221;
114/238, 239; 417/50**[56] **References Cited****U.S. PATENT DOCUMENTS**

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[57] **ABSTRACT**

A torpedo launching system with a magnetohydrodynamic (MHD) pump for torpedo launches is disclosed. The system comprises a sea chamber, impulse tank and launch tube. The impulse tank has a magnetohydrodynamic pump which provides a Lorentz force to the seawater within the impulse tank thereby launching the torpedo. The MHD pump comprises supercooled superconducting electromagnets and seawater electrodes set up to provide perpendicular electric and magnetic fields.

1 Claim, 2 Drawing Sheets